

## **Session 6 – IEC EX Scheme and adoption of it by the USCG**



## The IECEx Scheme

The IECEx Scheme facilitates the international exchange and acceptance of product-safety test results among participating laboratories for national approval or certification in one or more countries, normally without the need for additional testing. This is a universal goal among suppliers, consumers, and interested parties stated as “one standard, one test, accepted everywhere.” The objective of the IECEx Scheme is to facilitate international trade in electrical equipment intended for use in explosive atmospheres (referred to as Ex equipment).

The Ex scheme applies to manufacturers of:

- Electrical apparatus for explosive gas atmospheres
- Electrical apparatus for the detection and measurement of flammable gases
- Electrical products such as switches, outlets and outlet boxes, circuit breakers, electric motors, and lighting used in hazardous environments

According to the IEC, these manufacturers can expect:

- Reduced testing and certification costs
- Reduced time to market
- International confidence in the product assessment process
- One international database listing

There are currently 17 Accepted Certification Bodies (ACBs) in 22 countries participating in the IECEx Scheme.



# The IECEx Scheme

## Background

Historically, obtaining all of the necessary national safety certifications for electrical products used in explosive atmospheres has been a difficult, time-consuming and expensive proposition. To facilitate the entry of U.S. manufacturers into the international market, the United States applied to join the IECEx Scheme on February 9, 2001 and was accepted in April of 2001.

In the Ex Scheme, the IECEx accredits Accepted Certification Bodies (ACBs) to test and certify conformity of electrical equipment used in explosive atmospheres with internationally harmonized product safety standards and issue “Ex” test certificates and test reports. By significantly reducing duplicate testing, the Ex scheme provides substantial advantages over the previously available methods of obtaining multiple international certifications.

## Operating Concepts

The IECEx Scheme is a multilateral agreement among participating countries and certification organizations based on the use of international (IEC) Standards. If a member’s national standards are not yet completely harmonized with the IEC standards, a transitional period is allowed. The transitional period can vary for different standards and is intended to allow time for harmonization between the IEC standards and the country’s national standards and to obtain national acceptance of IECEx Certificates of Conformity and the IECEx Mark of Conformity.

The IECEx Scheme utilizes Ex test certificates to attest that product samples have successfully complied with the appropriate tests and are in compliance with the requirements of the relevant IEC Standard.

## The IECEx Scheme

The IEC Ex Scheme is a recent movement started by the IEC in 1991 to facilitate international trade by eliminating the need for duplication of testing and certifications. Presently, for a manufacturer to gain approval of equipment in various countries, the alternative to submitting equipment to each country's test laboratory is to apply to one laboratory. These labs have agreements with many others around the world resulting in a spider web arrangement. Each agreement requires periodic review of each other's capabilities which is expensive and time consuming. Each country has specific conflicts with universal standards and markings that are known as national differences. Examples of these differences are the flame-retardant tests or shock tests required by local fire codes in the U.S.. The U.S. has joined the IEC Ex scheme but allows for a 15-year adoption period while differences are resolved among the multitude of differences in local requirements.

**The ultimate goal of the IEC EX Scheme is to remove any trade barriers between countries and have a single unified stamp, single test procedure and reciprocal agreements among countries and test labs for implementation....**

# IECEX vs. ATEX Directive

**IECEX Certificate of Conformity**

INTERNATIONAL ELECTROTECHNICAL COMMISSION  
IEC Certification Scheme for Explosive Atmospheres  
for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: IECEx PTB 07.0060 issue No.: 0 Certificate history: .....

Status: **Current**

Date of Issue: **2007-11-05** Page 1 of 4

Applicant: **ROSE Systemtechnik GmbH**  
Erbeweg 13 - 15  
32457 Porta Westfalica  
Germany

Electrical Apparatus: **Connection and Junction Box Type 35. .... and 36. ....**  
Optional accessory:

Type of Protection: **Increased Safety, Protection by Enclosures**

Marking: **Ex e ia IIC T6, T5, T4**  
**Ex ID A21 IP66 T 85°C, T 100 °C, T 135 °C**

Approved for issue on behalf of the IECEx Certification Body: Dr.-Ing. Uwe Klausmeyer

Position: Head of Section "Flameproof Enclosures"

Signature: *[Signature]*  
(for printed version)

Date: **03. 3. 08**

1. This certificate and schedule may only be reproduced in full.  
2. This certificate is not transferable and remains the property of the issuing body.  
3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:  
**Physikalisch-Technische Bundesanstalt (PTB)**  
Bundesallee 100  
38116 Braunschweig  
Germany

VS.

Physikalisch-Technische Bundesanstalt  
Braunschweig und Berlin

**PTB**

**EG-Baumusterprüfbescheinigung**

(1) Geräte und Schutzsysteme zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen - **Richtlinie 94/9/EG**

(2) EG-Baumusterprüfbescheinigungsnummer **PTB 00 ATEX 1052**

(3) Gerät: Energieverteilungs-, Schalt- und Steuerkombination Typ 35. .... und 36. ....

(4) Hersteller: ROSE Elektrotechnik GmbH + Co. KG

(5) Anschrift: D-32457 Porta Westfalica

(6) Die Bauart dieses Gerätes sowie die verschiedenen zulässigen Ausführungen sind in der Anlage zu dieser Baumusterprüfbescheinigung festgelegt.

(7) Die Physikalisch-Technische Bundesanstalt bescheinigt als benannte Stelle Nr. 0102 nach Artikel 9 der Richtlinie des Rates der Europäischen Gemeinschaften vom 23. März 1994 (94/9/EG) die Erfüllung der grundlegenden Sicherheits- und Gesundheitsanforderungen für die Konzeption und den Bau von Geräten und Schutzsystemen zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen gemäß Anhang II der Richtlinie.

Die Ergebnisse der Prüfung sind in dem vertraulichen Prüfbericht PTB Ex 00-10074 festgelegt.

(8) Die grundlegenden Sicherheits- und Gesundheitsanforderungen werden erfüllt durch Übereinstimmung mit **EN 50014:1997 EN 50018:1994 EN 50019:1994 EN 50020:1994**

(9) Falls das Zeichen „X“ hinter der Bescheinigungsnummer steht, wird auf besondere Bedingungen für die sichere Anwendung des Gerätes in der Anlage zu dieser Bescheinigung hingewiesen.

(10) Diese EG-Baumusterprüfbescheinigung bezieht sich nur auf Konzeption und Bau des festgelegten Gerätes gemäß Richtlinie 94/9/EG. Weitere Anforderungen dieser Richtlinie gelten für die Herstellung und das Inverkehrbringen dieses Gerätes.

(11) Die Kennzeichnung des Gerätes muß die folgenden Angaben enthalten:

**Ex II 2 G EEx e II T6 bzw. EEx ed IIC T6 bzw. EEx ia IIC T6 T6 bzw. EEx ed [ia] IIC T6**

Zertifizierungsstelle Explosionschutz  
Im Auftrag  
i. V. *[Signature]*  
Dr.-Ing. U. Klausmeyer  
Regierungsdirektor

**Die grundlegenden Sicherheitsanforderungen sind mit EN 50014:1997**


Falls das Zeichen „X“ hinter der Bescheinigungsnummer steht, wird auf besondere Bedingungen für die sichere Anwendung des Gerätes in der Anlage zu dieser Bescheinigung hingewiesen.

EG-Baumusterprüfbescheinigungen ohne Unterschrift und ohne Siegel haben keine rechtliche Wirkung.  
Diese EG-Baumusterprüfbescheinigung darf nur unverändert weiterverbreitet werden.  
Auszüge oder Änderungen bedürfen der Genehmigung der Physikalisch-Technischen Bundesanstalt.  
Physikalisch-Technische Bundesanstalt • Bundesallee 100 • D-38116 Braunschweig

Date

What are the differences from a certificate standpoint?

# IEC Draft as voted upon with members of Cenelec



## 31/999/FDIS

**FINAL DRAFT INTERNATIONAL STANDARD**  
**PROJET FINAL DE NORME INTERNATIONALE**

|   |   |  |
|---|---|--|
| Project number<br>Numéro de projet<br><b>IEC 60079-1/Ed7</b>  | IEC/TC or SC CE/ICE ou SC<br><b>TC 31</b>                                       | Secretariat / Secréariat<br><b>UK</b>                    |
| <input checked="checked" type="checkbox"/> Submitted for parallel voting in CENELEC<br>Soumis au vote parallèle au CENELEC  | Distributed on / Diffusé le<br><b>2012-07-06</b>                                | Voting terminates on / Vote clos le<br><b>2012-09-07</b> |
| <input type="checkbox"/> Also of interest to the following committees<br>Intéresse également les comités suivants   | Supersedes document<br>Remplace le document<br><b>31/929/CDV and 31/979/RVC</b> |  |
| Horizontal standard<br>Norme horizontale<br><input type="checkbox"/> Other TC/SCs are requested to indicate their interest, if any, in this FDIS to the TC/SC secretary<br>Les autres CE/SC sont requis d'indiquer leur intérêt, si nécessaire, dans ce FDIS à l'attention du secrétaire du CE/SC |   |  |
| Functions concerned<br>Fonction concernée   |   |  |

|                              |   |   |
|------------------------------|---|---|
| <input type="checkbox"/> IEC | <input type="checkbox"/> Environment<br>Environnement | <input type="checkbox"/> Quality assurance<br>Assurance de la qualité |
|------------------------------|---|---|

APPROBATION. IL NE PEUT ÊTRE PUBLIÉ EN TANT QUE PROJET INTERNATIONAL. EN ADDITION À LEUR ÉVALUATION EN VUE DE LEUR SERVIR DE RÉFÉRENCE, LES COMités NATIONAUX SONT INVITÉS À PRÉSENTER, EN CAS DE PROPRIÉTÉ INDUSTRIELLE, DES DROITS DE PROPRIÉTÉ INDUSTRIELLE ET À FOURNIR UNE COPIE DE LA DOCUMENTATION. LES DESTINATAIRES DE CE DOCUMENT SONT INVITÉS À SOUMETTRE, AVEC LEURS COMMENTAIRES, NOTIFICATION DE DROITS DE PROPRIÉTÉ INDUSTRIELLE RELEVANTS DESQUELS ILS SONT CONSCIENTS ET À FOURNIR LA DOCUMENTATION APPUYANT.

**ATTENTION IEC – CENELEC PARALLEL VOTING**

The attention of IEC National Committees, members of CENELEC, is drawn to the fact that this final draft International Standard (DIS) is submitted for parallel voting. The CENELEC members are invited to vote through the CENELEC online voting system.

Title  
**IEC 60079-1/Ed7: Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"**

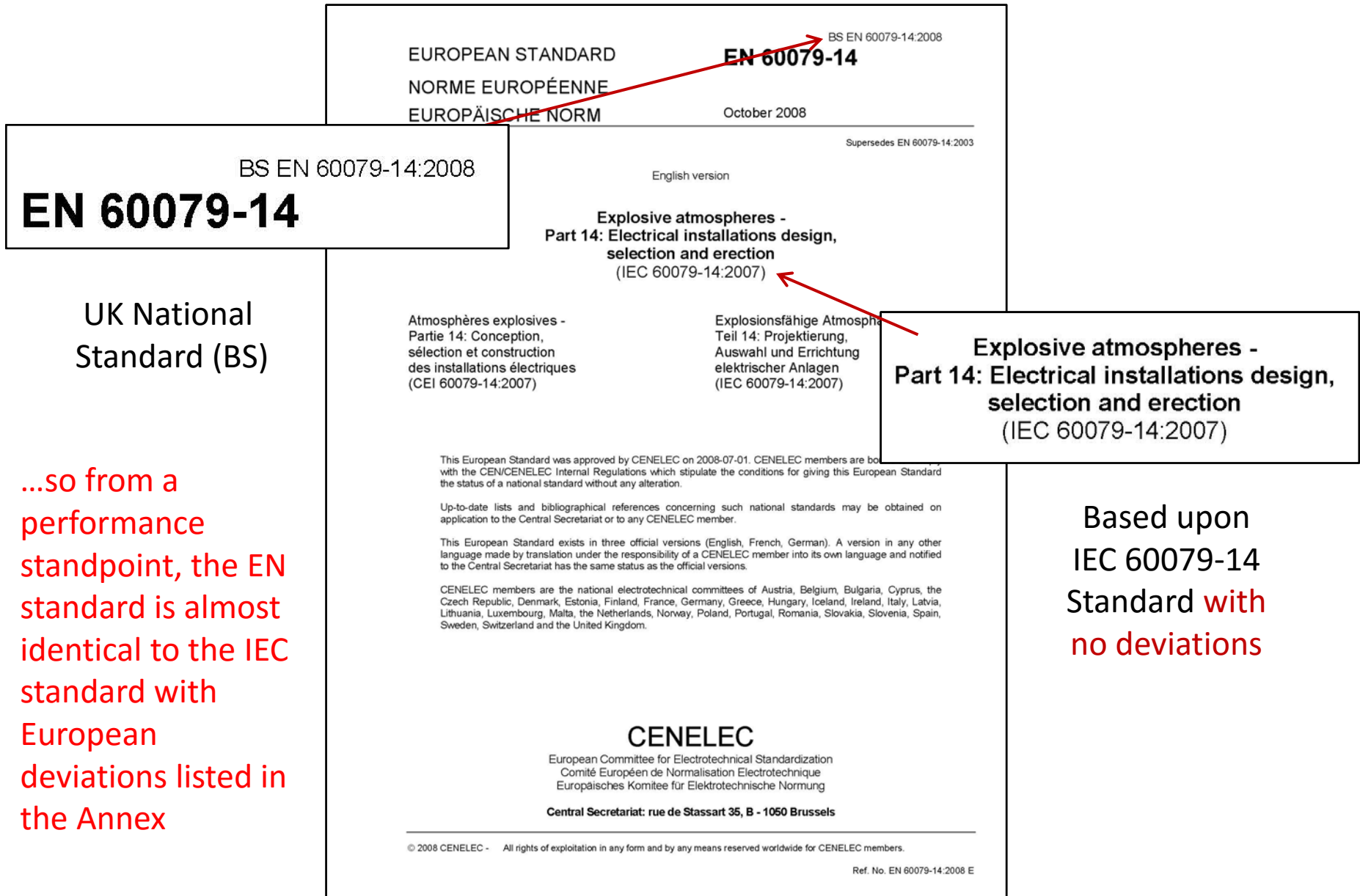
**ATTENTION VOTE PARALLÈLE CEI – CENELEC**

L'attention des Comités nationaux de la CEI, membres du CENELEC, est attirée sur le fait que ce projet finale de Norme internationale est soumis au vote parallèle. Les membres du CENELEC sont invités à voter via le système de vote en ligne du CENELEC.

**ATTENTION IEC – CENELEC PARALLEL VOTING**

The attention of IEC National Committees, members of CENELEC, is drawn to the fact that this final draft International Standard (DIS) is submitted for parallel voting. The CENELEC members are invited to vote through the CENELEC online voting system.

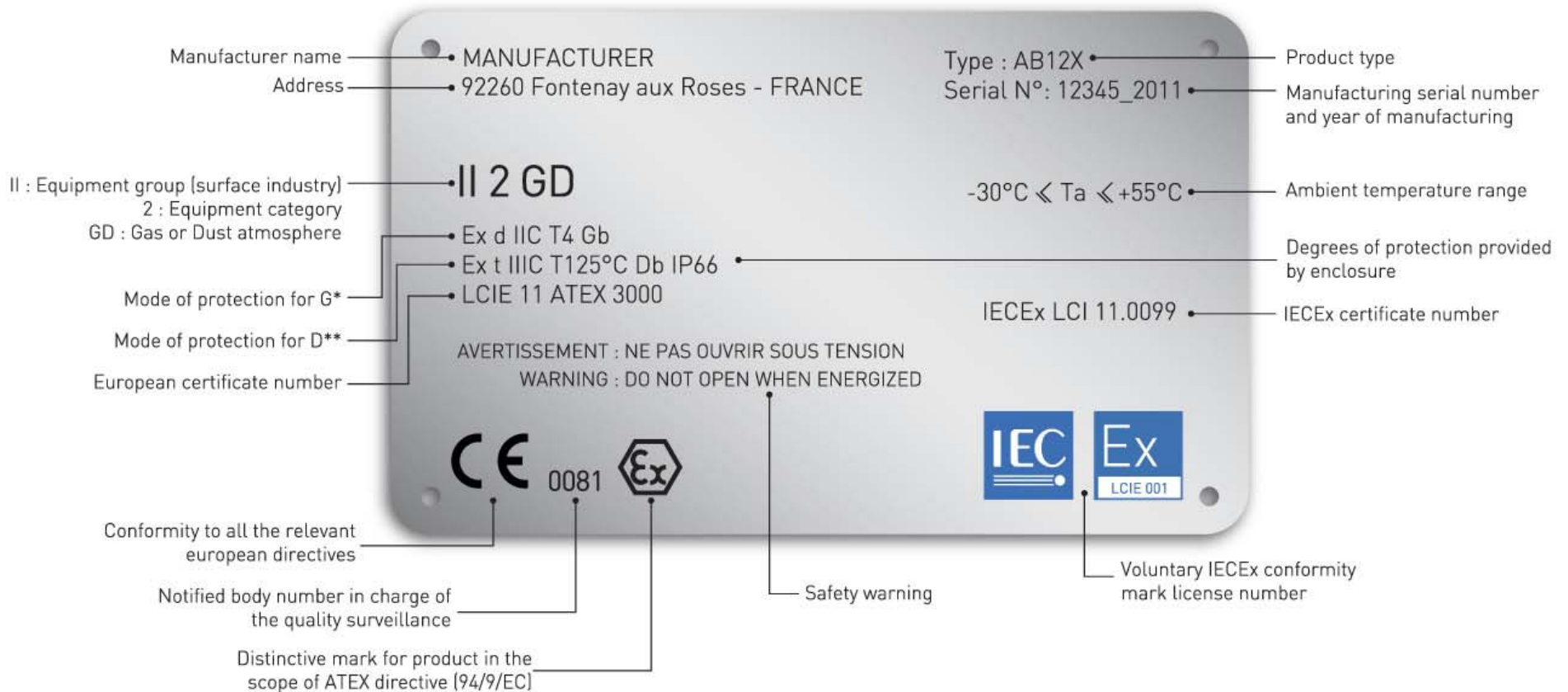
# EN standard as adopted from the original IEC standard





# Example of Dual Marked IECEx/ATEX Label

## ELECTRICAL PRODUCT





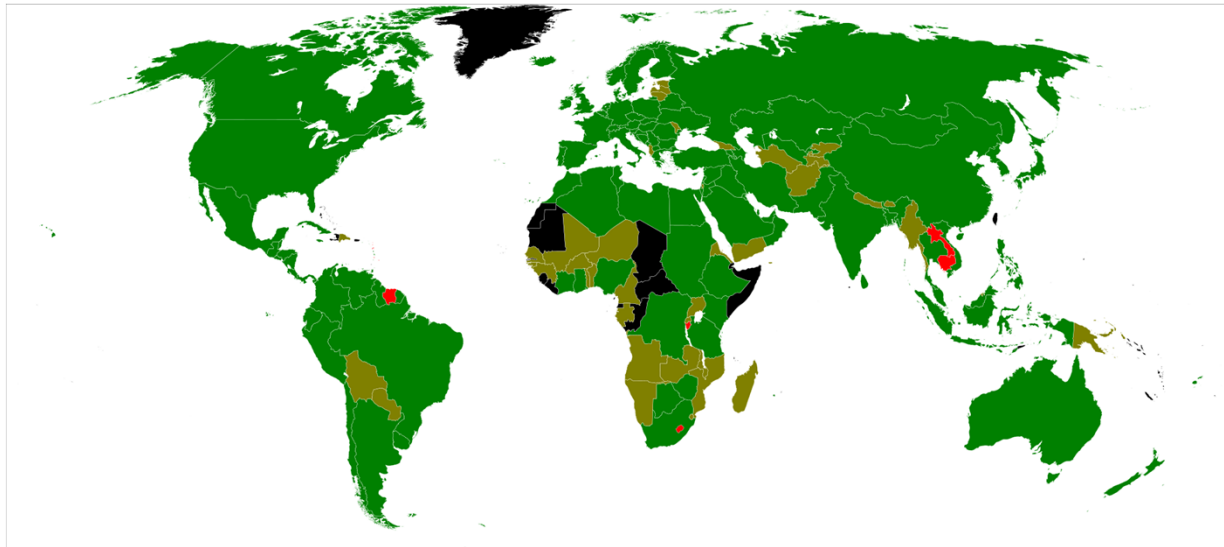
## IECEX vs. ATEX Directive

The standards that have been set forth between CENELEC (who is responsible for EN hazardous location standards in Europe) and the IEC with regards to IEC standards for hazardous locations are now **identical**. Countries such as the UK, Italy, Germany, etc. adopt the EN standards and **by law**, are to follow these as country specific standards. From a manufacturing standpoint, this makes life much easier as the products to comply with EN & IEC standards are now the same....



## Relationship between the ISO and IEC

- ISO and IEC are committed to creating market-driven International Standards, based on objective information and knowledge on which there is global consensus, and not on subjective judgments, in order to provide credible technical tools that can support the implementation of regulation and public policy initiatives.
- ISO and IEC are committed to developing International Standards that are market relevant, meeting the needs and concerns of all relevant stakeholders including public authorities where appropriate, without seeking to establish, drive or motivate public policy, regulations, or social and political agendas.



67 member/69 affiliate  
countries  
Most developed  
countries are members  
of the IEC...

## Experience with the IECEx system for one manufacturer re: IEC Ex Test Reports...

- US/Canada: ExTR accepted for Zone System, ExTR may be accepted for division concept (e.g. Intrinsic Safety) 😊
- Russia, Ukraine, Belarus: ExTR accepted 😊
- China: ExTR accepted 😊
- South Korea: ExTR accepted 😊
- Hongkong, Taiwan, Vietnam, Indonesia (not IEC Ex members) ExTR not accepted but ATEX Test report accepted 😞
- Japan: ExTR not generally accepted, many tests required 😞
- India: ExTR accepted 😊
- Brazil, Argentina, Chile: ExTR accepted 😊
- South Africa: ExTR accepted 😊

**So to conclude here, even though many countries do not yet accept IECEx Certification as written, they will accept the IECEx Ex Test Report issued by one of the Ex Test Labs as a basis for approval for issuing an Ex certificate for that particular country, since most of these country standards are based upon the original IEC 60079 set of standards**

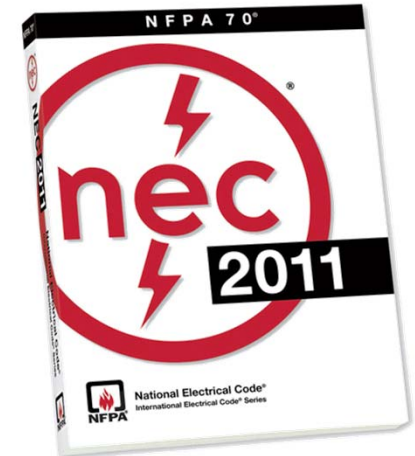
## Factors leading towards IECEx as the defacto 'World Standard'

- Since most countries adopt 'IEC' in some form or fashion, it has the widest following.
- Many of the developed countries are members of the IEC
- EN Standards and IEC Standard are in many cases the same
- Makes it simpler for a manufacturer to build and certify a product
- Makes it simpler for a customer to use 'best practices' on a world wide basis
- Since it is International and not Country/Region Specific, less likely to be influenced by specific country political conflicts
- Many users would like to harmonize to streamline production and drive efficiency into the production system
- More competition from more sources around the world from both test labs and manufacturers
  
- Key point: India and China are both making it clear that they would prefer IECEx over alternative Ex testing/standards systems
- Key Markets such as Australia already accept IECEx certification with other countries such as Brazil (Inmetro/Cepel) and Russia (GOST-R) potentially accepting IECEx.
- **How about the US? How are we leaning?**

## EX Equipment in the US

Onshore: NEC 500 & 505

- Division Concept/Zone Concept both acceptable
- Approval – By recognized NRTL (OSHA) which includes UL, FM, Intertek (ETL), CSA to ANSI/NEMA/UL standards including UL60079 series of standards
- Zone Concept in US – Must be tested and certified to “AEx” which **does not recognize true IEC** standards and approvals. **ATEX & IECEx not accepted in the NEC.**
- Offshore: BSEE has authority over fixed platforms while the USCG has authority over floaters
- Recognizes both US/Division/Zone concepts and recognizes IEC standards (IEC 60079 series) per 46CFR-111 and protection concepts such as flameproof (Ex d), Increased Safety (Ex e) and others.
- Must be tested and certified by a recognized USCG test lab which include the ones above as well as some other test labs as listed on the next slide.



## Some of the USCG Approved Test Labs



All of these labs are able to offer some sort of approval to IEC 60079 set of standards and many of these labs are also ATEX Notified Bodies as well

**What about using a non-USCG IECEx TL for the GOM?**

## EX Equipment in the GOM

The Coast Guard is providing guidance regarding electrical equipment installed in hazardous areas on foreign-flagged Mobile Offshore Drilling Units (MODUs) that have never operated, but intend to operate, on the U.S. Outer Continental Shelf (OCS). Chapter 6 of the 2009 version of the IMO Code for the Construction and Equipment of Mobile Offshore Drilling Units (2009 IMO MODU Code) sets forth standards for testing and certifying electrical equipment installations.

The Coast Guard is considering issuing a rule that will implement Chapter 6 of the 2009 IMO MODU Code and that will be applicable to foreign-flagged MODUs that have never operated, but intend to operate, on the U.S. OCS. In the interim, the Coast Guard recommends that owners and operators of foreign-flagged MODUs that have never operated, but intend to operate on the U.S. OCS, voluntarily comply with Chapter 6 of the 2009 IMO MODU Code.

[Federal Register Volume 77, Number 232 (Monday, December 3, 2012)]

[Notices]

[Pages 71607-71608]

From the Federal Register Online via the Government Printing Office ([www.gpo.gov](http://www.gpo.gov))

[FR Doc No: 2012-29138]

\*\*\*\*\*

DEPARTMENT OF HOMELAND SECURITY

Coast Guard

[Docket No. USCG-2012-0839]

Mobile Offshore Drilling Unit (MODU) Electrical Equipment

Certification Guidance

AGENCY: Coast Guard, DHS.

ACTION: Notice of policy.

SUMMARY: The Coast Guard is providing guidance regarding electrical equipment installed in hazardous areas on foreign-flagged Mobile Offshore Drilling Units (MODUs) that have never operated, but intend to operate, on the U.S. Outer Continental Shelf (OCS). Chapter 6 of the 2009 version of the International Maritime Organization (IMO) Code for the Construction and Equipment of Mobile Offshore Drilling Units (2009 IMO MODU Code) sets forth standards for testing and certifying electrical equipment installations on MODUs. The Coast Guard is considering issuing a rule that will implement Chapter 6 of the 2009 IMO MODU Code and that will be applicable to foreign-flagged MODUs that have never operated, but intend to operate, on the U.S. OCS. In the interim, the Coast Guard recommends that owners and operators of foreign-flagged MODUs that have never operated, but intend to operate on the U.S. OCS, voluntarily comply with Chapter 6 of the 2009 IMO MODU Code.

DATES: The policy outlined in this document is effective December 3, 2012.

ADDRESSES: The documents referenced in this notice and published by the International Maritime Organization, International Electrotechnical Commission, or International Organization for Standardization are available for purchase from the publishers. For more information on where to



## EX Equipment in the GOM

The 2009 IMO MODU Code recommends that electrical installations in hazardous areas be **tested and certified in accordance with the IEC 60079** series of standard(s). The IEC offers an international certification system called the "Certification to Standards Relating to Equipment for use in Explosive Atmospheres" (IECEx). The IECEx system requires full compliance with the applicable IEC 60079 series of standard(s), including the testing of equipment by an Independent Test Lab.

The ATEX Directive is intended to ensure the certification of electrical equipment to the Essential Health and Safety Requirements given in the Directive or appropriate IEC harmonized standards, but it **does not specifically require testing and certification by an independent third party lab.**

To summarize, the USCG prefers IECEx equipment tested by one of the USCG test labs vs. ATEX approved equipment for foreign flagged vessels operating in the GOM

**Note: The 'self-certifying issue with ATEX as well as the quality of the Notified Bodies by Europa is driving organizations concerned about safety away from ATEX and towards IECEx.**

## EX Equipment in the GOM

Latest Ruling by the USCG, March 2015....

### Key Points

- All rigs currently in the GOM are grandfathered as well as rigs currently in construction
- Any rig that wishes to operate in the GOM effective April 1<sup>st</sup> 2018 must be either North American Division/Zone or IECEx per a USCG approved test lab....
- ATEX only equipment not allowed....



Federal Register / Vol. 80, No. 61 / Tuesday, March 31, 2015 / Rules and Regulations

#### DEPARTMENT OF HOMELAND SECURITY

Coast Guard

33 CFR Part 100  
[Docket No. USCG-2015-0066]

#### Notice of Enforcement for Special Local Regulations; RiverFest; Port Neches, TX

AGENCY: Coast Guard, DHS.

ACTION: Notice of enforcement of regulation.

**SUMMARY:** The Coast Guard will enforce Special Local Regulations for the RiverFest Power Boat races on the Neches River in Port Neches, TX from 2 p.m. on May 1, 2015, through 6 p.m. on May 3, 2015. This action is necessary to provide for the safety of the participants, crew, spectators, participating vessels, non-participating vessels and other users of the waterway. During the enforcement periods no person or vessel may enter the zone established by the Special Local Regulation without permission of the Captain of the Port (COTP) Port Arthur or his designated on-scene Patrol Commander.

**DATES:** The regulations in 33 CFR 100.801 will be enforced from 2 p.m. to 6 p.m. on May 1, 2015; and from 8:30 a.m. to 6 p.m. on May 2 and 3, 2015.

**FOR FURTHER INFORMATION CONTACT:** If you have questions on this notice of enforcement, call or email Mr. Scott Whalen, U.S. Coast Guard Marine Safety Unit Port Arthur, TX; telephone 409-719-5086, email [scott.k.whelen@uscg.mil](mailto:scott.k.whelen@uscg.mil).

#### SUPPLEMENTARY INFORMATION:

The Coast Guard will enforce Special Local Regulation for the annual boat races in 33 CFR 100.801(60) on May 1, 2015, from 2 p.m. to 6 p.m. and on May 2 and 3, 2015 from 8:30 a.m. to 6 p.m.

Under the provisions of 33 CFR 100.801, a vessel may not enter the regulated area, unless it receives permission from the Captain of the Port or his designated on-scene Patrol Commander. Spectator vessels may safely transit outside the regulated area but may not anchor, block, loiter, or impede participants or official patrol vessels. The Coast Guard may be assisted by other federal, state or local law enforcement agencies in enforcing this regulation.

This notice is issued under authority of 33 CFR 100.801 and 33 U.S.C. 1233. In addition to this notice in the **Federal Register**, the Coast Guard will provide the maritime community with

notification of this enforcement period via Local Notice to Mariners, Safety Marine Information Broadcasts, and Marine Safety Information Bulletins.

If the Captain of the Port or his designated on-scene Patrol Commander determines that the regulated area need not be enforced for the full duration stated in this notice, he or she may use a Broadcast Notice to Mariners to grant general permission to enter the regulated area.

Dated: March 12, 2015.

**R. S. Ogyrdziak,**  
Captain, U.S. Coast Guard, Captain of the Port, Port Arthur.

[FR Doc. 2015-07319 Filed 3-30-15; 8:45 am]

BILLING CODE 919-04-P

#### DEPARTMENT OF HOMELAND SECURITY

Coast Guard

33 CFR Parts 140 and 143

46 CFR Parts 110 and 111

[Docket No. USCG-2012-0850]

RIN 1625-AC00

#### Electrical Equipment in Hazardous Locations

AGENCY: Coast Guard, DHS.

ACTION: Final rule.

**SUMMARY:** The Coast Guard is issuing regulations applicable to newly constructed mobile offshore drilling units (MODUs), floating outer continental shelf (OCS) facilities, and vessels other than offshore supply vessels (OSVs) that engage in OCS activities. The regulations expand the list of acceptable national and international explosion protection standards and add the internationally accepted independent third-party certification system, the International Electrotechnical Commission System for Certification to Standards relating to Equipment for use in Explosive Atmospheres (IECEx), as an accepted method of testing and certifying electrical equipment intended for use in hazardous locations. The regulations also provide owners and operators of existing U.S. MODUs, floating OCS facilities, vessels other than OSVs, and U.S. tank vessels that carry flammable or combustible cargoes, the option of following this compliance regime as an alternative to the requirements contained in existing regulations.

**DATES:** This final rule is effective April 30, 2015.

The Director of the Federal Register has approved the incorporation by reference of certain publications listed in this rule, effective April 30, 2015.

**ADDRESSES:** Comments and material received from the public, as well as documents mentioned in this preamble as being available in the docket, are part of docket USCG-2012-0850 and are available for inspection or copying at the Docket Management Facility (M-30), U.S. Department of Transportation, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. You may also find this docket online by going to <http://www.regulations.gov> and following the instructions on that Web site.

*Viewing material incorporated by reference.* You may make arrangements to view this material by calling the Coast Guard's Office of Regulations and Administrative Law at 202-372-3870 or by emailing [HQS-5MB-CoastGuardRegulationsLaw@uscg.mil](mailto:HQS-5MB-CoastGuardRegulationsLaw@uscg.mil).

**FOR FURTHER INFORMATION CONTACT:** If you have questions on this rule, call or email Mr. Raymond Martin, Systems Engineering Division (CG-ENG-3), Coast Guard; telephone 202-372-1384, email [Raymond.J.Martin@uscg.mil](mailto:Raymond.J.Martin@uscg.mil). If you have questions on viewing or submitting material to the docket, call Cheryl Collins, Program Manager, Docket Operations, telephone 202-366-9826.

#### SUPPLEMENTARY INFORMATION:

##### Table of Contents for Preamble

- I. Abbreviations
- II. Regulatory History
- III. Background
- IV. Discussion of Comments and Changes
- V. Incorporation by Reference
- VI. Regulatory Analysis
  - A. Regulatory Planning and Review
  - B. Small Entities
  - C. Assistance for Small Entities
  - D. Collection of Information
  - E. Federalism
  - F. Unfunded Mandates Reform Act
  - G. Taking of Private Property
  - H. Civil Justice Reform
  - I. Protection of Children
  - J. Indian Tribal Governments
  - K. Energy Effects
  - L. Technical Standards
  - M. Environment

#### I. Abbreviations

ABS American Bureau of Shipping  
ANSI American National Standards Institute  
ASTM ASTM International  
ATEX (Directive) Protective Systems Intended for use in Potentially Explosive Atmospheres

## To summarize....

- If a company wishes to sell products into the offshore market in the US, you can follow IECEx, AEx (NEC505) or Class Division (NEC 500)
- If a company wishes to sell products for the offshore European market, you are limited to following the ATEX Directive
- If a company wishes to sell to other offshore markets, generally speaking IECEx is acceptable but you may have to get additional certification/markings such as TR CU (Russia), Inmetro (Brazil), etc. These country specific standards are based around the IEC 60079 sets of standards.....



## IECEX vs. ATEX Directive

| ITEM                      | IECEX   | ATEX  |
|---------------------------|---|---|
| Organisation / Management | Industry Representatives (Manufacturers, Certification Bodies, Ex Equipment End Users, Regulators, Community interests)   | E. U. Commission (Government Regulatory)  |
| Aim                       | One Single Certificate, for any hazardous area product and services recognized and accepted worldwide (Market Acceptance)   | Covers equipment & remove barriers to trade and improve safety for equipment and workers  |
| Validity / Legal          | Today: Products with IECEX Certificate accepted in several countries. Alternatively a single test report (ExTR) can be sent to any IECEX Certifier to issue locally accepted certification. | ATEX Directive is Law in all the E. U. Countries (Mandatory application). Limited in scope to Europe.   |
| Field of Application      | Current: Electrical and Non electrical products and systems. Gas/Dust Industries. Now Covering SERVICE INDUSTRIES, e.g. Repair and Overhaul.  | Electrical and non electrical products and systems. Gas/Dust Industries. Equipment ONLY.  |
| Standards Used            | International Standards only , e.g. IEC Compliance to Standards is mandatory.   | Any recognized standard may be applied provided it meets the Essential Health and Safety Requirements of the Directive. However, the E.U. Commission approves list of Harmonized Standards. Allows for Interpretation Compliance to Standards not mandatory but is generally used to assess products. |

## IECEX vs. ATEX Directive

| ITEM                    | IECEX   | ATEX  |
|-------------------------|---|---|
| Certification Procedure | <p>ExCBs issue [for Certified Equipment Program]: ExTR (Product Type), Ex QAR (production facility quality audit), IECEX CoC (Certificate of Conformity), ExCBs issue [for Certified Service Facilities Program], CAR (IEC 60079-19 Compliance Report Form), FAR (Facilities Audit Report Form), IECEX CoC (Certificate of Conformity) On-Line Certificate of Conformity System -Reports are officially registered on IECEX website. Electronic On-Line CoC available for full public view, acts as master controlled version Common Rules applicable to all applications. Rules of Procedure for each Program (IECEX 02, IECEX 03, IECEX 04), Operational Document ODs provide Standard operating procedures to be followed by all ExCBs, Technical Decision Sheets, Accessible full listing along with all Scheme documents maintained and available via single IECEX website location, Single appeals body available, Decisions of the Management Committee are binding on all ExCBs, Certificate Holders etc.</p> | <p>ExNBs issue-EC Type examination certificate. Ex QAN (Quality Assessment notification for production facility).</p>   |
| Conformity Assessment   | <p>For IECEX Certified Equipment Program: ExTR + QAR = IECEX Certificate of Conformity (CoC) ExTR = IECEX Test Report QAR = IECEX Quality Assessment Report Applicable to ALL products, no difference between Zones or products CoC issued via Secure IEC Website ensures FULL Public access to issued Certificates Self Certification not permitted For IECEX Certified Services: FAR + Assessment of Competencies = IECEX Certificate FAR = Facilities Audit Report Applicable to ALL Services CoC issued via Secure IEC Website ensures FULL Public access to issued Certificates. Self Certification not permitted.</p>   | <p>Declaration of Conformity by Manufacturer to declare that he is in possession of necessary documents and reports. -Certificate issued by ExNB only for category 1 / 2 and M 1 / 2 electrical equipment-Self certification allowed for Category 3 and Category 2 Mechanical. Does not cover service facilities.</p> |

## IECEX vs. ATEX Directive

| ITEM                        | IECEX  | ATEX   |
|-----------------------------|--|--|
| Organisms for Certification | All ExCBs and ExTLs are subject to the following assessment: Initial Peer Assessment by a 3 member IECEX Assessment Team, prior to entry to IECEX -Annual Surveillance of ExCBs and ExTLs -5 Year re-assessment for all ExCBs and ExTLs Dedicated IECEX Technical Secretariat to manage day to day operations of the IECEX Scheme IECEX Management Committee (ExMC) IECEX Technical Assessment Group (ExTAG) IECEX Conformity Mark Committee (ExMarkCo). | ATEX Notified Bodies (ExNBs) appointed by individual nomination of the governments of their countries. A common assessment system does not exist. Surveillance of ExNBs dependant upon national governments. |
| Manufacturer Surveillance   | ExCB maintains the Status of the IECEX Certificate of Conformity based on the outcome of follow up Quality Audits, QARs.   | ExNBs conduct regular audits of manufacturers.   |
| Work place Requirements     | Nothing – Refers to National regulations.  | ATEX Directive 137 contains special requirements for workers and management.   |

## IECEX Marking: EPL

EPL =

- Explosion
- Protection
- Level
- This is the IECEx equivalent to the ATEX Categories
- Now current for newly-certified equipment, even ATEX

| Zone | ATEX Cat. | IECEX EPL |
|------|-----------|-----------|
| 0    | 1G        | Ga        |
| 1    | 2G        | Gb        |
| 2    | 3G        | Gc        |
| 20   | 1D        | Da        |
| 21   | 2D        | Db        |
| 22   | 3D        | Dc        |

(Ga) (Da) [Ex ia] IIC

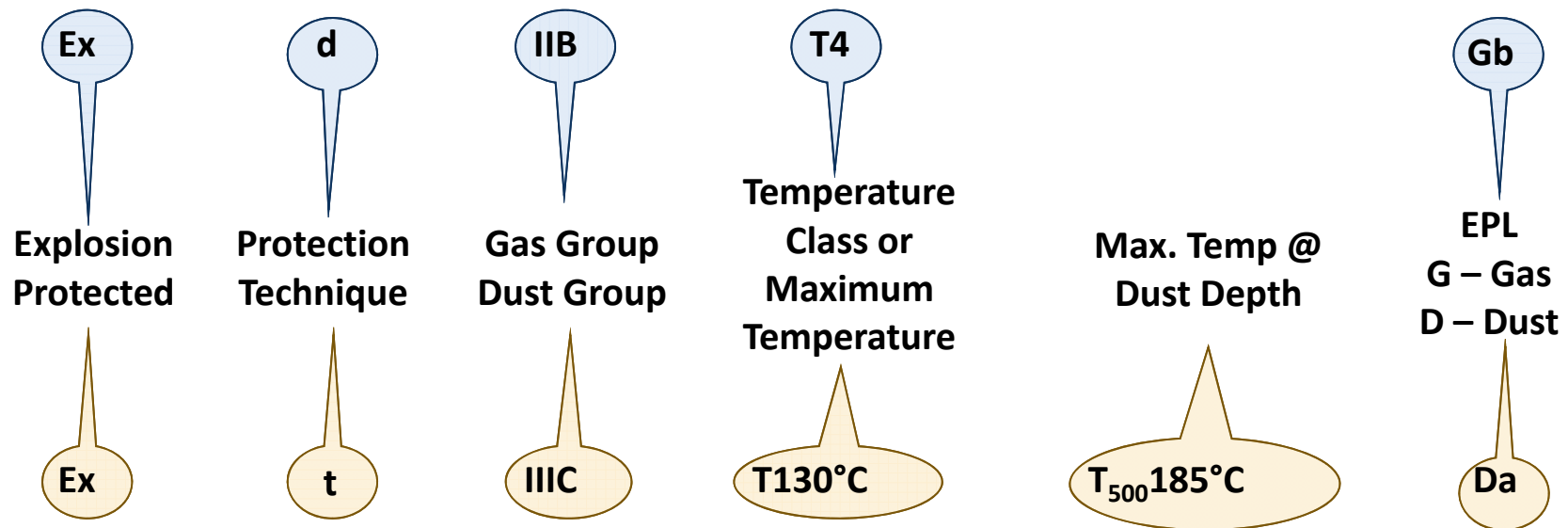


Brackets () indicate that the device is to located in the 'safe area'  
But can supply zones 0 (Ga) and 20 (Da)



# IECEx Equipment Marking

New marking including EPLs



Similar marking is also being implemented on mechanical equipment

# IECEX Marking Requirements compared to ATEX...

Not Required.  
No European  
Marking...

Not Required.  
No European  
Marking...

Can be used  
in Zone 1 & 2  
IECEX  
certificate  
number

~~CE~~  
0518

~~Ex~~

**ABTECH**  
Inc.

**ABTECH**  
HUMBLE, TEXAS, 77338 USA

TYPE SX 64

RATING 10 WATTS

SERIAL No. 43433 2002

~~II 2 GD - IP66 - T6 55°C~~

**Gb Ex e II T6 T amb 55**

**IECEX SIRA 07.0123X**


**WARNING!!!**

LIVE TERMINALS ISOLATE  
ELSEWHERE BEFORE OPENING  
ENCLOSURE

Not Required. No  
European  
Marking...

# IECEX Quality Assessment Report

The IECEX QAR is a requirement under the IECEX scheme to ensure the manufacturer has a quality system in place to produce the hazardous equipment. The manufacturer is audited by the certification body every 12 to 28 months to ensure this quality is being maintained.

|  <b>IECEX / ATEX<br/>QUALITY ASSESSMENT REPORT</b>      |   |
|---|---|
| QAR No.: 05.020/2006  |   |
| IECEX QAR Reference No.: AU/TSA/QAR06.0004/01   |   |
| <b>CONFIDENTIAL</b>   |   |
| <b>Manufacturer (Auditee)</b>   | : Govan Industries Pty Ltd  |
| <b>Address</b><br><small>Include post code</small>  | : 131 – 149 Link Drive<br>Campbellfield<br>Victoria 3061<br>Australia   |
| <b>Product (Range)</b>  | : Luminaires, junction boxes, switch enclosures, control stations and panels, instrument enclosures, circuit breaker enclosure, sockets and plugs, reducers, adaptors, nipples and stopping plugs, electronic bell  |
| <b>No. of Employees</b><br><small>(Include the total number of employees on site and those involved in production of Ex products)</small> | : Total: 45<br>No. involved in Ex products: 40  |
| <b>Scope of Audit</b>   | : Initial Assessment *    Re-Assessment *<br><u>Surveillance Assessment</u> <input checked="" type="checkbox"/>   |
| <small>List all applicable Ex Certificates, including AUSEx, (or attach addendum) to which this audit applies.</small>                    | : IECEX CSA 06.0008U<br>IECEX TSA 06.0020<br>IECEX TSA 06.0054<br><small>Refer to the IECEX website for a complete listing of all IECEX certificates issued. (Various AUSEx certificates are in the process of replacement by IECEX certificates, further details held on file)</small> |
| <small>Electrical equipment with type(s) of protection of</small>   | : d ✓   e ✓   n ✓   DIP ✓   |
| <b>Audit of Quality Management System to the requirements of</b>  | : IECEX OD005 (V2) and EN13980:2002   |
| <b>Audit Team Leader</b>  | : Ujen Singh  |
| <b>Auditing Organisation</b>  | : TestSafe Australia  |
| <b>Report Date</b>  | : 07 February 2007  |
| <b>Contents:</b>  |   |
| 1. Summary Report   |   |
| 2. Audit information  |   |
| 3. Documentation Review and Assessment of Implementation  |   |
| 4. Observations   |   |
| 5. Annexures  |   |
| Govan_2006 <span style="float: right;">Page 1 of 8</span>   |   |

## IECEX Certified Repair Facility Program

The IECEx Certified Service Facility Program is the latest International Certification system dedicated to the highly specialized 'Ex' industries – where potentially explosive environments require more stringent equipment standards. These include the oil and gas, coal mining, and grain and dust industries. Within the European Community, a suitable repair facility that did work on EX equipment could be done by any number of firms, at various levels of competency, the IECEx certified service program allows firms that are in this field to obtain accreditation for services on EX equipment and also allows products that may not be put back into service otherwise...

